

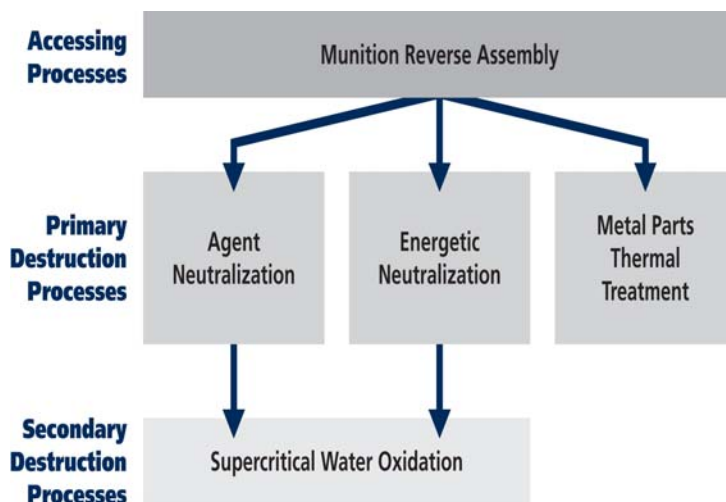
Neutralization Followed by Supercritical Water Oxidation

A Partnership for Safe Chemical Weapons Destruction

Together with Blue Grass Army Depot, the Assembled Chemical Weapons Alternatives program has worked with the community in selecting neutralization followed by supercritical water oxidation (SCWO) as the technology to destroy the chemical weapons stored at the depot. The Bechtel Parsons Blue Grass Team was awarded a contract in June 2003 to design, construct, test, operate and close the Blue Grass Chemical Agent-Destruction Pilot Plant.

How neutralization followed by SCWO works

- Munitions are disassembled by modified reverse assembly. The chemical agent and energetics are separated. Agent and energetics are chemically mixed with caustic or water to destroy the chemical agent using hydrolysis. The resulting chemical compounds, known as hydrolysates, are held and tested to ensure agent destruction before proceeding to secondary treatment.
- The agent and energetic hydrolysates are fed to the supercritical water oxidation units to destroy the organic materials. SCWO subjects the hydrolysate to very high temperatures and pressures, breaking them down into carbon dioxide, water and salts.
- Metal parts are thermally decontaminated by high-pressure water washout and heating to 1,000 degrees Fahrenheit for a minimum of 15 minutes. The metal parts can then be safely recycled.
- Gas effluents are filtered through a series of HEPA and carbon filters before being released to the atmosphere. Water is recycled into the pilot plant facility and reused as part of the destruction process.



FOR MORE INFORMATION CONTACT: Additional information on chemical stockpile disposal is available at the Blue Grass Chemical Stockpile Outreach Office, 301 Highland Park Drive, Richmond, KY 40475. Telephone: 859-626-8944. E-mail address: outreach@bechtel.com. For additional information, please contact the Blue Grass Army Depot public affairs officer at 859-779-6221 or the Blue Grass Chemical Activity public affairs officer at 859-779-6897.